

REMARKS

This Response is filed in reply to the Final Office Action dated May 14, 2004. Claims 1, 2 and 31-52 are in the application. Claims 1, 2 and 31-40 are allowed. Claims 41-52 have been rejected. The issues of the May 14, 2004 Final Office Action are presented below with reference to the Office Action.

With regard to the Office Action, paragraphs 1 and 2: The Examiner rejected claims 41-44 and 47-50 under 35 U.S.C. 102(b) as being anticipated by Blankenburg, U.S. Patent Ser. No. 5,728,325.

With regard to the Office Action, paragraphs 3 and 4: The Examiner rejected claims 45, 46, 51 and 52 under 35 U.S.C. 103(a) as being unpatentable over Blankenburg.

Applicants traverse the Examiner's rejections and respectfully request reconsideration in view of the amendments and remarks.

In this Response, Applicants amend claims 41 and 47 to explicitly recite that the injection gas initially forms the cavity. Amendments to the claims are not an acquiescence to any of the rejections. Furthermore, silence with regard to any of the Examiner's rejections is not an acquiescence to such rejections. Specifically, silence with regard to Examiner's rejection of a dependent claim, when such claim depends from an independent claim that Applicants consider allowable for reasons provided herein, is not an acquiescence to such rejection of the dependent claims, but rather a recognition by Applicants that such previously lodged rejection is moot based on Applicants' remarks and/or amendments relative to the independent claims (that Applicants consider allowable) from which the dependent claims depend. Applicants reserve the option to further prosecute the same or similar claims in the instant or a subsequent application. Upon entry of the Amendment, claims 1, 2 and 31-52 are pending in the present application. Applicants gratefully acknowledge the Examiner's allowance of claims 1, 2 and 31-40.

With respect to claims 41 and 47, Applicants submit that the actions of injecting a melt into a mould and injecting gas into the melt inherently form a gas cavity and that, without recitation of an intervening action, the injection of the gas initially forms the gas cavity. However, in order to move prosecution forward, Applicants amend independent claims 41 and 47 to explicitly recite moulding methods that include *injecting an injection gas into a melt to*

initially form a gas cavity in the melt. Claim 41 recites that the injection gas is *cooled to below ambient air temperature* and claim 47 recites that the injection gas *has a temperature lower than that of the ambient air temperature*. Since the initial forming of the cavity by a gas cooled to below, or having a temperature below ambient air temperature is inherent claims 41 and 47 as previously presented, the amendments to the claims do not change the scope of the claims and do not require further search of the art.

Blankenburg states in the "Description of the Art" (Column 1, lines 19-22) "*In forming hollow plastic articles, pressurised gas is injected into the cavity (mold) along with or just after injection of molten plastic (melt) into the cavity. The pressurised gas forces the molten plastic against the walls of the mold cavity where it cools to a solid state while forming a hollow interior (cavity) within the molded article*". At Column 1, lines 39-51 Blankenburg states that in the prior-art use of a constant temperature gas, typically at ambient temperature causes immediate cooling of the molten plastic before it is forced completely against the walls of the mold and so impairs the quality of the molded article. The Blankenburg invention overcomes this disadvantage of the prior art by teaching a two step method in which in the first step only high temperature gas is injected (to form the cavity); and in the second step a low temperature gas is injected. Blankenburg states that this two-step method is to "*prevent cooling of the plastic upon initial contact between the gas and the molten plastic*" during formation of the cavity (hollow). Hence, Blankenburg does not teach a method where cold or very cold gas is (initially) injected into melt within a mold to form a cavity. In fact Blankenburg teaches away from first injecting cold gas. Thus, all of the embodiments disclosed by Blankenburg teach a first step in which hot gas is injected to prevent premature freezing of the melt. For example, see Column 2, lines 2-6; Column 4, lines 28-31; Column 5, lines 8-11 and particularly Column 2, line 64 to Column 3, line 6 and Column 10, lines 21-34.

At Column 5, lines 31-48, Blankenburg describes an embodiment illustrated in Figure 3, which apparatus allows the injection of extremely low temperature gas to the injection mold, in addition to cold gas. The essential features of this embodiment are summarized at Column 10, lines 22-34 as follows:

In summary there has been disclosed apparatus which uniquely provides different temperature gasses to an injection mold. The supply of different temperature gasses to the mold in a predetermined, variably

selectible sequence enables gas at substantially the same hot temperature of the molten plastic to be first injected into the mold to force the molten plastic outward against the walls of the mold cavity while preventing any initial solidification of such molten plastic prior to its compacting against the mold walls. The subsequent injection of cold temperature gas or extremely low temperature gas, either individually or in any sequence, can be utilized to hasten the solidification of the molten plastic into the final, desired product shape while providing the desired surface quality and constant wall thickness of the final product.

Thus, again, the very cold gas is not injected to initially form the cavity.

Claims 41 and 47 have been amended to explicitly recite that gas cooled to below, or having a temperature below ambient air temperature is used to initially form the cavity (hollow) within the melt. Thus, Applicants respectfully assert that Blankenburg neither anticipates claims 41 and 47 (as amended) nor renders them obvious. In summary, Blankenburg does not disclose *injecting an injection gas into the melt to initially form a cavity in the melt, wherein the gas is cooled to below the external ambient air temperature before being injected into the melt*, as recited in claim 41, or *utilising injection gas having a temperature lower than that of ambient air temperature*, as recited in claim 47. Further, in specifically teaching away from first injecting such a below ambient temperature gas there is no motivation in Blankenburg for the skilled person to contemplate initial use of such (below ambient temperature) gas.

Applicants respectfully request that the amendments to the claims be entered in that the amendments clearly place the claims in condition for allowance. Reconsideration of the rejections of the claims in light of the amendment is respectfully requested. The remarks herein are being made solely to expedite the prosecution of the above-identified application. Applicants reserve the option to further prosecute the same or similar claims in the instant or subsequent patent applications.

CONCLUSION

Applicants consider the Response herein to be fully responsive to the referenced Final Office Action. Based on the above Remarks, it is respectfully submitted that this application is in condition for allowance. Accordingly, allowance is requested. If there are any remaining issues or the Examiner believes that a telephone conversation with Applicants' attorney would be helpful in expediting the prosecution of this application, the Examiner is invited to call the undersigned at 617-832-1175.

Respectfully submitted,

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